

BUS 735: Business Decision Making and Research
In-class Exercise

Name: _____

Directions: Work in groups of up to four people and answer the following questions. All papers will be collected, but only one member's paper will be randomly selected and graded and all members of the group will receive the same grade.

By signing below, you agree that the following work represents the efforts of everyone in the group, and you are willing to accept as your own grade for the group project the grade earned from this representation of your group's work. Every member must agree to these terms to earn a non-zero grade for this assignment.

_____ Signature Group Member 1	_____ Print Name	_____ Date
_____ Signature Group Member 2	_____ Print Name	_____ Date
_____ Signature Group Member 3	_____ Print Name	_____ Date
_____ Signature Group Member 4	_____ Print Name	_____ Date

1. Suppose you are considering opening a car dealership and you are considering being an authorized dealership for either Chrysler, Cadillac, or Mitsubishi. Suppose Chrysler's best selling cars are typically trucks and SUV's; Cadillac's best selling cars are luxury full size cars; and Mitsubishi's best selling cars are small, compact cars. The average monthly profit for each type of dealership depends on long-term macroeconomic conditions. Suppose the expected monthly profits for each type of dealership for given economic conditions are given in the table below. Not knowing the probabilities of each of these events, answer the questions that follow.

Economic Condition

Decision	Economic Recession	Slow Stable Growth	Economic Expansion
Chrysler	\$200,000	\$400,000	\$600,000
Cadillac	-\$100,000	\$200,000	\$800,000
Mitsubishi	\$250,000	\$350,000	\$450,000

- (a) What is the best decision if using the maximax criterion?

- (b) What is the best decision if using the maximin criterion?

- (c) What is the best decision if using the minimax regret criterion?
- (d) What is the best decision if using the equal likelihood criterion?
- (e) What is the best decision if using Hurwicz criterion with a coefficient of optimism equal to 0.2?
- (f) Use Excel to compute a range for Hurwicz optimism coefficients and the associated decisions. Based on this analysis, what decision do you think is best?

2. Suppose past data of the local economy reveals the following historical probabilities for economic recession, slow economic growth, and economic expansion:

Economic Condition	Probability
Economic Recession	20%
Slow Stable Growth	55%
Economic Expansion	25%

- (a) Using these probabilities, choose the best decision for a car dealership that maximizes the expected value of profits.

- (b) Calculate the maximum amount of money that you would pay a market researcher to determine the likely long-run economic condition.

- (c) Suppose the Federal Reserve Bank of Minneapolis recently released an economic forecast report suggesting the economy would maintain slow stable growth, and there is virtually no possibility for economic expansion. Suppose that the Fed accurately forecasts stable growth conditions 80% of the time and accurately forecasts economic recessions 65% of the time. Use these probabilities (and disregarding the possibility of economic expansion) and choose the best decision for a car Dealership that maximizes the expected value of profits.